

BEFORE THE BOARD OF OIL, GAS AND MINING  
DEPARTMENT OF NATURAL RESOURCES  
IN AND FOR THE STATE OF UTAH

IN THE MATTER OF THE REQUEST FOR AGENCY  
ACTION OF QEP ENERGY COMPANY FOR APPROVAL  
OF UNIT OPERATIONS AND ENHANCED AND SECONDARY  
RECOVERY OPERATIONS IN THE GREEN RIVER FORMATION  
WITHIN ALL OF SECTION 5 AND THE SE1/4SE1/4  
OF SECTION 6 IN TOWNSHIP 8 SOUTH, RANGE 22 EAST,  
SLM, UINTAH COUNTY, UTAH, FOR AUTHORITY FOR  
UNDERGROUND INJECTION OF WATER, FOR EXCEPTION  
TO THE SITING AND LOCATION REQUIREMENTS FOR  
VERTICAL WELLS, AND FOR CERTIFICATION AS AN  
ENHANCED RECOVERY PROJECT FOR PURPOSES OF  
SECTION 59-5-102(7) OF THE UTAH CODE, ANNOTATED.

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DOCKET NO. 2011-004 CAUSE NO. 271-01  
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TAKEN AT: Department of Natural Resources  
1594 West North Temple, Room 1040  
Salt Lake City, Utah

DATE: Thursday, February 24, 2011

TIME: 10:29 a.m. to 11:40 a.m.

REPORTED BY: Michelle Mallonee, RPR

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JOB #A501C15

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Ruland J. Gill, Jr.  
Jake Y. Harouny (Excused)  
James T. Jensen, Chairman  
Kelly L. Payne  
Samuel C. Quigley (Excused)  
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Emily Lewis - Division Attorney  
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I N D E X

WITNESS	PAGE
Nathan Koeniger	
Direct Examination by Mr. Ward	8
Cross-Examination by Mr. Dworshak	14
Bob Bassi	
Direct Examination by Mr. Ward	15
Cross-Examination by Mr. Gill	33
Cross-Examination by Mr. Hill	34
William Watts	
Direct Examination by Mr. Ward	35
Cross-Examination by Mr. Doucet	43
Cross-Examination by Mr. Gill	44
Cross-Examination by Mr. Alder	49
Clint Dworshak	
Testimony by Mr. Dworshak	51
Michael Coulthart	
Comments by Mr. Coulthart	52

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Docket No. 2011-004 Cause No. 271-01

Thursday, February 24, 2011

(The proceedings began at 10:29 a.m.)

CHAIRMAN JOHNSON: Okay, Mr. Ward.

This is Docket No. 2011-004 Cause No. 271-01 -  
In the Matter of the Request for Agency Action of QEP  
Energy Company for Approval of Unit Operations and  
Enhanced and Secondary Recovery Operations in the Green  
River Formation within all of Section 5 and the SE1/4  
SE1/4 of Section 6 in Township 8 South, Range 22 East,  
SLM, Uintah County, Utah, for Authority for Underground  
Injection of Water, for Exception to the Siting and  
Location Requirements for Vertical Wells, and for  
Certification as an Enhanced Recovery Project for  
purposes of Section 59-5-102(7) of the Utah Code,  
Annotated.

Mr. Ward, you are representing the petitioner?

MR. WARD: Thank you, Mr. Chairman.

CHAIRMAN JOHNSON: And Mr. Alder, you are  
representing the Division?

MR. ALDER: Yes.

CHAIRMAN JOHNSON: Mr. Gill, do you have a  
statement?

MR. GILL: I do. In the past, I have recused  
myself from all QEP matters. And I did that because I

1       had a small, but sincere, outstanding stock option. I no  
2       longer have that. But I do own, as a retired employee of  
3       Questar, some stock, and I am part of their retirement  
4       pension program. I don't have an interest in the  
5       property or the operations, other than that general --  
6       and I may own stock in a mutual fund or two, but I have  
7       no control over that.

8               I don't think I have a conflict anymore. But if  
9       someone has a problem with it, I'd more than happy to  
10      recuse myself. And at the end of the testimony and the  
11      hearing, if I feel like there is a concern, I would  
12      reserve the right at the end of it before deliberations  
13      to, again, recuse myself.

14             CHAIRMAN JOHNSON: Do either of the parties have  
15      a concern regarding Mr. Gill serving with the Board on  
16      this matter?

17             MR. ALDER: I don't believe there is any  
18      opposition that we're aware of to the petition by third  
19      parties. And the Division has no objection to Mr. Gill  
20      participating.

21             MR. WARD: We have no objection.

22             CHAIRMAN JOHNSON: Then let's proceed.

23             Mr. Ward, would you please go ahead.

24             MR. WARD: Yes. For the record, my name is  
25      William Ward. I'm an attorney licensed in Utah. And I'm

1 here today representing QEP Energy Company.

2 I'd like to introduce the three witnesses that I  
3 plan to use today: Nate Koeniger, a landman with QEP;  
4 Bob Bassi, a petroleum geologist; and Bill Watts, a  
5 petroleum engineer. I'd like to ask that they be sworn  
6 in at this time.

7 CHAIRMAN JOHNSON: Let's swear all three  
8 witnesses then, please.

9 THE REPORTER: Will you raise your right hands,  
10 please.

11 You and each of you do solemnly swear the  
12 testimony you are about to give will be the truth, the  
13 whole truth, and nothing but the truth so help you God?

14 (The witnesses answered in the affirmative.)

15 MR. WARD: And I'd like to ask the Board's  
16 permission to move for admission of all of my exhibits at  
17 the conclusion of my presentation.

18 CHAIRMAN JOHNSON: That would be fine.

19 MR. WARD: To summarize the case today, QEP is  
20 here today requesting approval of a secondary recovery  
21 unit known as the Horse unit. The proposed unit covers a  
22 total of 731.75 acres located in Uintah County. All of  
23 the lands included within the unit are federal lands  
24 administered by the Bureau of Land Management. QEP is  
25 seeking approval to conduct secondary recovery operations

1 in the Green River Formation. QEP is prepared today to  
2 demonstrate that the secondary recovery unit meets the  
3 statutory requirements for approval and the requirements  
4 of Utah Code Annotated 59-5-1027 to be certified as an  
5 enhanced recovery project.

6 I'd like to have my first witness, Nate  
7 Koeniger, at this time. I'd also like to note that Mr.  
8 Koeniger is testifying as to facts, so he doesn't need to  
9 be certified as an expert witness.

10 CHAIRMAN JOHNSON: Okay.

11 NATHAN C. KOENIGER,

12 Having been first duly sworn,  
13 was examined and testified as follows:

14 DIRECT EXAMINATION

15 BY MR. WARD:

16 MR. WARD: Please state your name and address  
17 and current -- your name and your current business  
18 address for the record.

19 MR. KOENIGER: I'm Nathan C. Koeniger. And my  
20 business address is 1050 17th Street, Suite 500, Denver,  
21 Colorado, 80265.

22 MR. WARD: What is your current position with  
23 QEP?

24 MR. KOENIGER: Senior landman.

25 MR. WARD: And are you the landman responsible



1       for administering QEP's interest in the unit lands?

2               MR. KOENIGER:   Yes.

3               MR. WARD:   Would you confirm that QEP is a Texas  
4       corporation in good standing, duly qualified to conduct  
5       business in the state of Utah and fully bonded with all  
6       appropriate federal and state Utah agencies?

7               MR. KOENIGER:   Yes, it is.

8               MR. WARD:   I would like to call the Board's  
9       attention to Exhibit A.

10              Was this exhibit prepared under your  
11       supervision?

12              MR. KOENIGER:   Yes.

13              MR. WARD:   And would you please explain this  
14       exhibit.

15              MR. KOENIGER:   Exhibit A is a regional location  
16       map showing the unit lands in relation to the state of  
17       Utah.

18              MR. WARD:   I'd like to move to our Exhibit B.

19              CHAIRMAN JOHNSON:   Mr. Ward.

20              MR. WARD:   Yes.

21              CHAIRMAN JOHNSON:   Maybe I'm looking in the  
22       wrong place, but I have a different map for Exhibit A.

23              MR. WARD:   You might be looking at the exhibits  
24       to the original Request.   We'll be going over the  
25       exhibits that were submitted separately as the

1       petitioner's exhibits.

2               CHAIRMAN JOHNSON:   Okay.

3               MR. WARD:   I did confuse you by call them both  
4       A.

5               CHAIRMAN JOHNSON:   Okay.   Thank you.   We have  
6       the correct maps on our screens?

7               MR. WARD:   Yes.

8               CHAIRMAN JOHNSON:   Now I've got your correct  
9       exhibit.   Thank you.

10              MR. WARD:   So this is Exhibit B.

11              Was this prepared under your supervision?

12              MR. KOENIGER:   Yes, it was.

13              MR. WARD:   And what is the purpose and  
14       explanation for this exhibit?

15              MR. KOENIGER:   Exhibit B shows the relation of  
16       the unit lands to other lands in the area.   Federal  
17       exploratory units in the area are also shown in the  
18       different colored outlines.   There is the White River  
19       Unit, the Red Wash Unit, Kilimanjaro Unit, and the  
20       Wonsits Valley Unit.   QEP operates all of these units.

21              And this map also shows the location of the  
22       proposed injector well in the northeast-northwest of  
23       Section 5 in Township 8 South, Range 21 East -- 22 East,  
24       excuse me.

25              MR. WARD:   And I also note that the Kilimanjaro

1 unit is outlined on there. Can you explain to us a  
2 little about the existence of the Kilimanjaro unit that  
3 overlaps the unit lands?

4 MR. KOENIGER: The Kilimanjaro unit is shown in  
5 the bright red outline, and it -- pointer doesn't show up  
6 on there. You'll see it on your monitors in the bright  
7 red outline. Essentially, that unit overlaps our Horse  
8 unit, but it only covers depths below the base of the  
9 Green River Formation. So there's no conflict.

10 MR. WARD: I'd like to call your attention to  
11 the next exhibit, then, Exhibit C.

12 Was this Exhibit C prepared under your  
13 supervision?

14 MR. KOENIGER: It was.

15 MR. WARD: Would you please explain this  
16 exhibit.

17 MR. KOENIGER: Exhibit C is a detail map of the  
18 unitized area showing the tracts involved and also the  
19 lots and the acreage numbers in Section 5. It also shows  
20 the tract participation factors for the unit tracts.

21 MR. WARD: So to clarify, we have three tracts?

22 MR. KOENIGER: That is correct.

23 MR. WARD: Okay. I'd like to move on to the  
24 next exhibit, D.

25 Was this Exhibit D prepared by you?

1 MR. KOENIGER: Exhibit D was prepared by me.

2 MR. WARD: And this exhibit provides the  
3 allocation formula for the three individual tracts within  
4 the proposed unit.

5 Can you please explain the basis of the formula  
6 QEP used to determine these tract participations?

7 MR. KOENIGER: Tract participations are based on  
8 a 50 percent allocation to the unit acreage and  
9 50 percent to current production. However, all the  
10 current production is coming from the Section 5 lease,  
11 which is Tract 1. And the numbers in bold on the  
12 right-hand side are the tract participation factors.

13 MR. WARD: Thank you. And I have a couple other  
14 matters to discuss.

15 I'd like to call your attention to QEP's Request  
16 for Agency Action. And as part of the Request, we asked  
17 for a state-wide general location rule to be suspended  
18 within the unit. Why is this important for QEP?

19 MR. KOENIGER: This will allow us flexibility in  
20 drilling future wells in the unit.

21 MR. WARD: And even though that rule is to be  
22 suspended, will there still be a setback required for any  
23 new wells from the boundary line of the unit?

24 MR. KOENIGER: Yes, 460 feet.

25 MR. WARD: Thank you.

1                   And as shown on the exhibit with the injector  
2                   wells, QEP currently has one injector well proposed for  
3                   the unit lands.

4                   Has QEP obtained approval from the Environmental  
5                   Protection Agency for this injection well?

6                   MR. KOENIGER: Yes, we have.

7                   MR. WARD: I'd like to talk a little bit about  
8                   the notice that we was provided for the Request. I'd  
9                   like to show you a copy of the Certificate of Service,  
10                  which was attached to the Request for Agency Action.

11                  Do you recognize the names on this certificate,  
12                  and what are those names?

13                  MR. KOENIGER: I do recognize these names.  
14                  These are the interest owners as well as the federal and  
15                  state agencies which supervise the unit lands.

16                  MR. WARD: Can you explain how this list was  
17                  compiled?

18                  MR. KOENIGER: To back up just a little bit,  
19                  we've noticed those owners and agencies within a half  
20                  mile radius of the unitized lands as well.

21                  To answer your next question, yes, we --

22                  MR. JENSEN: Could we ask that you speak into  
23                  the microphone?

24                  MR. KOENIGER: Absolutely.

25                  MR. JENSEN: Thank you.

1                   MR. KOENIGER: QEP hired an independent land  
2                   company, Geo Scout Land & Title, to review the records of  
3                   Uintah County and the BLM and the state of Utah and  
4                   provide us with accurate, latest-recorded addresses for  
5                   these entities, and those also within a half-mile radius  
6                   of the unitized lands.

7                   MR. WARD: Was a copy of the request sent via  
8                   certified mail to all of the owners?

9                   MR. KOENIGER: Yes, it was.

10                  MR. WARD: No further questions for you.

11                  CHAIRMAN JOHNSON: Mr. Alder, do you have any  
12                  questions for Mr. Koeniger?

13                  MR. ALDER: Mr. Chairman, Mr. Dworshak of the  
14                  Division has one question about setbacks he would like to  
15                  ask.

16                               CROSS-EXAMINATION

17                  BY MR. DWORSHAK:

18                  MR. DWORSHAK: I understand that the setbacks --

19                  CHAIRMAN JOHNSON: Mr. Dworshak, would you  
20                  please identify yourself for the record.

21                  MR. DWORSHAK: Clint Dworshak, compliance  
22                  manager.

23                  The existing wells in the section, in particular  
24                  the south half of 5, do those currently meet that  
25                  setback?

1           MR. WARD: I believe they may have been located  
2           with an exception location to the -- and that exception  
3           location would still be available for this setback. But  
4           the rules, to start out with, will be 460 feet.

5           MR. DWORSHAK: Okay.

6           MR. ALDER: No other questions.

7           CHAIRMAN JOHNSON: Does the Board have questions  
8           for Mr. Koeniger?

9           Thank you, Mr. Koeniger.

10          MR. MORRIS: Thank you Mr. Chairman.

11          CHAIRMAN JOHNSON: Did you have any redirect?

12          MR. WARD: No, I do not.

13          CHAIRMAN JOHNSON: Thank you.

14          MR. WARD: The next witness that I would like to  
15          ask to testify is Bob Bassi, a petroleum geologist with  
16          QEP.

17                       BOB BASSI,  
18                       having been first duly sworn,  
19                       was examined and testified as follows:

20                       DIRECT EXAMINATION

21          BY MR. WARD:

22                  MR. WARD: Will you please state your full name  
23                  and current business address for the record.

24                  MR. BASSI: My name is Bob Bassi. I'm employed  
25                  with QEP Energy in Denver. And my business address there

1 is 1040 17th Street, Suite 500, Denver, Colorado, 80265.

2 MR. WARD: What is your current position with  
3 QEP?

4 MR. BASSI: I'm a geologist with QEP.

5 MR. WARD: Can you provide for us a brief  
6 description of your qualifications as a geologist.

7 MR. BASSI: Yes. I've been employed with QEP  
8 for the last 20 years, and that includes QEP's  
9 predecessor companies, Questar and Celsius Energy. The  
10 last eight years of that employment have been exclusively  
11 here in the state of Utah working in the Uinta Basin on  
12 oil projects similar to what I'm going to speak about  
13 today.

14 Prior to that time, I was employed in Denver,  
15 Colorado, and working Rocky Mountain Basin as a petroleum  
16 geologist for 13 years.

17 And ahead of that, I was -- I received my  
18 geology degrees from the University of Michigan and  
19 Stanford Universities.

20 I'm currently a licensed petroleum geologist in  
21 the state of Utah in good standing. And I have testified  
22 before this Board on matters similar to this as an expert  
23 witness in geology on other occasions.

24 MR. WARD: I would ask that Mr. Bassi be  
25 recognized as an expert in the field of petroleum



1 geology.

2 MR. ALDER: No objection.

3 CHAIRMAN JOHNSON: Does the Board have any  
4 objections?

5 We'll recognize Mr. Bassi as an expert.

6 MR. WARD: Thank you. I'd like to call the  
7 Board's attention to Exhibit E. This is a geology map.

8 Was this Exhibit E prepared by you?

9 MR. BASSI: Yes, it was.

10 MR. WARD: Will you explain what this exhibit  
11 shows and what the purpose of the exhibit is?

12 MR. BASSI: Yes, I will. This exhibit shows a  
13 number of things. There's a lot of data on this map, and  
14 I will walk you through it so that you understand it.

15 Most striking, you can see the outline of a  
16 little over 700 acres shown in hot pink of the area which  
17 we wish to have designated as a secondary recovery unit,  
18 consisting entirely of Section 5 and a little bit of the  
19 southwest portion -- southeast portion of Section 6.  
20 It's principally a net pay map of the G1 sandstone, which  
21 is present in the lower portion of the Green River  
22 Formation and is the principal objective of this  
23 secondary recovery project.

24 That sand is mapped in two-foot contour  
25 increments going from zero feet up to a maximum projected

1 of about ten feet thick.

2 The well field that is shown on this map  
3 includes the data points spotted at those well symbols  
4 for which this map is constructed.

5 The little red numbers come from the most recent  
6 vintage of well control, or wells that were drilled  
7 principally for gas, as the underlying formations in this  
8 area were developed in the Wasatch Formation for gas  
9 production. And those modern wells, with their porosity  
10 logs, allow the measurement of pay thickness, which again  
11 is monitored well controls as well control in the red  
12 numbers.

13 The older vintage of wells, which I really want  
14 to call your attention to, are shown as the black dots.  
15 And they were drilled prior to the availability of  
16 porosity logs, so they spot pay thickness using a  
17 different tool. And those numbers are posted in green  
18 next to the well symbols.

19 So whether those wells penetrated the G1  
20 sandstone -- there's a little green number that, in some  
21 cases -- in many cases -- on the map agrees with the red  
22 number or is very close to it. So this map is comprised  
23 of two different vintages of well control.

24 Specifically, I call your attention to the fact  
25 that there are no green numbers in Section 5 adjacent to

1 the old oil wells. Those were drilled at a time where  
2 the G1 sandstone member went unrecognized as a producing  
3 sandstone. So all the old oil wells in Section 5 did not  
4 go deep enough to see the G1 sand.

5 The latest round of drilling in the year 2000  
6 and afterwards for gas located this sand as those wells  
7 were drilled to deeper targets and well logs were run  
8 past that G1 sandstone member. So as a result, what has  
9 happened is the G1 map that you are looking at today  
10 looks a whole lot different than what prior operators,  
11 Chevron, Gulf, and others, had in the 1950s and 60s to  
12 look at. And it explains why they ended development  
13 where they did and why this little piece of the northern  
14 extension of the G1 sandstone member, which gets up into  
15 Section 5, went unrecognized; and therefore, the oil in  
16 Section 5 did not come out during the course of  
17 production and water flood in the Wonsits Valley unit  
18 directly to the south of Section 5, where that unit is  
19 defined on your map as the blue outline.

20 So all those oil wells south of Section 5 had a  
21 prior history of production and water flood, which  
22 recovered almost all the oil from the G1 sandstone  
23 member, as well as the other sandstone members in that  
24 unit.

25 In the year 2002, QEP's predecessor company

1 drilled several wells specifically targeting this Section  
2 5 oil and, in fact, proved up the fact that the  
3 producible oil was still there. Those two wells that are  
4 currently producing in Section 5 from that vintage of  
5 drilling are shown in the southwest southwest quarter of  
6 Section 5 as a heavy green dot, and in the northeast of  
7 the southwest quarter of Section 5 as a heavy green dot.

8 So those two wells went on late in the history  
9 of this whole area for producing oil from the Green River  
10 Formation and have done very well. The production from  
11 those two wells is primarily primary production, but it  
12 has been seeing a secondary effect of late. And when we  
13 get to the engineering testimony, my engineering  
14 counterpart will describe a little more of that.

15 But the fact, again, remains that that oil has  
16 been proven to be present and producible in Section 5.  
17 We've got it coming out of at least two wells. We hope  
18 to gain additional production out of this sand body, as  
19 mapped in Section 5, by increasing the sweep area and  
20 driving production from the north half of the section to  
21 the south half where it can be recovered in what we  
22 expect will be greater volumes than what we could do if  
23 we only produced from vertical wells on primary  
24 production only.

25 So again, this map shows the distribution of

1 wells in Section 5, those that are current and active.  
2 It shows you why the boundary that we have drawn around  
3 our proposed recovery unit fits what we see relative to  
4 what we know about the distribution of this remaining oil  
5 in the G1 sand member of the Green River Formation.

6 MR. WARD: Thank you. Let's turn to the next  
7 exhibit, Exhibit F.

8 CHAIRMAN JOHNSON: Mr. Ward, can I ask one  
9 question before you leave Exhibit E?

10 MR. WARD: Sure.

11 CHAIRMAN JOHNSON: Mr. Bassi, I note in the  
12 legend on the map, the title block, it looks like your  
13 initials are in the lower right corner?

14 MR. BASSI: Yes.

15 CHAIRMAN JOHNSON: And the date below that is  
16 1/10/2010. Is that correct, 2010?

17 MR. BASSI: That should be 2011. Thank you.  
18 Good catch. However, I'd probably note that other than  
19 the production volumes, this map would have looked  
20 identical in 2010.

21 CHAIRMAN JOHNSON: Okay. Thank you.

22 MR. WARD: Turning to Exhibit F now, Type Log.  
23 Was this type log prepared by you?

24 MR. BASSI: I guess it was.

25 MR. WARD: Will you explain the relevance of the

1 type log for the Request?

2 MR. BASSI: What this type log shows, quite  
3 succinctly, is that interval of the Lower Green River  
4 Formation, which we asked to be included in our proposed  
5 water flood unit. That is a lot of the Lower Green River  
6 Formation, but not all. It specifically shows, in black  
7 lines near the top and the bottom, the depths picked off  
8 of this log, which is the 11G-5, located in this -- close  
9 to the center of Section 5 and is one of the two  
10 producing wells that produce from the G1, so that the  
11 specific correlation can be made to all adjacent well  
12 logs. That will define that increment that is to be  
13 unitized.

14 It also shows closer to the center of this log's  
15 section two color bars. There's a blue band, which  
16 corresponds to the presence of the G1 lime, which  
17 immediately overlies the producing element in Section 5  
18 that we are focused on, the G1 sand shown in yellow. And  
19 the perforations in this particular log are shown there  
20 as well.

21 The reason for not restricting this unit to just  
22 the G1 sand itself is that several sands above the G1  
23 have been involved in production and water flood in the  
24 past. And at least one interval below the G1 has been  
25 water flood and produced in federal units immediately

1 adjacent to this. And because we know from experience  
2 that water flood projects sometimes cross local  
3 boundaries of sands in limes and shales, we felt it  
4 appropriate to have a halo around the G1 so that in the  
5 event we find production immediately adjacent to it, we  
6 can continue in water flood operations, recovering oil,  
7 or injecting water into those sands, as well, if they  
8 benefit production in offset wells.

9 So, in essence, this section includes everything  
10 that's ever been water flooded stratigraphically adjacent  
11 to Section 5, and yet is restricted to an interval  
12 which -- beyond which we would have no plans that we  
13 recognize at this point in time; specifically, uphole of  
14 the Upper Green River Formation, including units such as  
15 the Birds Nest aquifer and the Mahogany Bench, which we  
16 don't want to involve in this particular well since they  
17 are involved in other projects that the Board has heard  
18 about elsewhere.

19 So again, we've captured everything  
20 stratigraphically that we expect to utilize and involve  
21 in water flood operations, and have evidence that that  
22 portion of the section has been useful. It has provided  
23 either production or projection avenues in adjacent units  
24 for this G1, and adjacent units have been produced.

25 MR. WARD: Next exhibit is Exhibit G.

1                   MR. GILL: Just one question on it. What kind  
2 of rock is the blue and what kind of rock is the yellow?

3                   MR. BASSI: The blue is the G1 lime.

4                   MR. GILL: It's a limestone?

5                   MR. BASSI: It's a limestone. It's an  
6 oolitic --

7                   MR. GILL: And then the G2 is sand?

8                   MR. BASSI: -- limestone. And the G1 sand is  
9 shown in yellow, and it's a conventional, normal,  
10 sandstone. So the G1 is unique, has lime in the sand.  
11 You've heard about the on G1 lime elsewhere today and in  
12 other projects in the past.

13                  MR. GILL: And the depositional history is just  
14 a green environment and shoreline --

15                  MR. BASSI: These are lake bottom sediments, for  
16 the most part, deposited in the lake or on the shores of  
17 the lake, which fluctuated through time in this area.  
18 And they're relatively local in that both the lime and  
19 the sand have expanse exceeding the number of square  
20 miles, but are not so extensive as to cover the whole  
21 county, for instance, or the whole lake.

22                  CHAIRMAN JOHNSON: Go ahead, Mr. Ward.

23                  MR. WARD: Thank you. Next Exhibit is Exhibit  
24 G.

25                         Was this Exhibit G prepared by you?



1                   MR. BASSI: Yes, it was.

2                   MR. WARD: And will you explain this exhibit?

3                   MR. BASSI: This picture is a stratigraphic  
4 cross section incorporating pretty much the two types of  
5 well expression -- well log expressions of the G1 sand  
6 within the proposed secondary recovery unit area. The  
7 one on the left comes directly off the type log from the  
8 previous exhibit and from the 11G-5 producing well, and  
9 shows on a -- it shows more closely the location of the  
10 perforations in the yellow band of the G1 sandstone and  
11 where the oil is coming from. And just for reference,  
12 the blue band of the overlying G1 lime is colored as  
13 well.

14                   You can also see on that particular well log --  
15 if you look just a few tens of feet above the blue band,  
16 you can see a very thick sandstone with a very low  
17 resistivity reading on it. That was one of the original  
18 producing units in Section 5. And it was thought to be  
19 the last in the vertically downward succession of the  
20 producing members of the Lower Green River Formation.  
21 And that is the point where drilling stopped. So you can  
22 see how close the operators got in 1960 to realizing  
23 there was one more sand underneath in the G1 sand present  
24 that could be exploited and produced. This well log came  
25 from a well which was drilled specifically to produce the

1 G1 sand. So it was the latest of the wells drilled in  
2 Section 5.

3 And then its counterpart to the north on the  
4 right side of the cross section is the other expression  
5 of the G1 sand in Section 5, where you can see it has  
6 gotten much thinner. And the porosity expression in that  
7 well is down to a two- or three-foot increment relative  
8 to about the eight feet that's present in the well on the  
9 left. So you can see the difference between the thick  
10 sand look and the thin sand look of the G1.

11 The perforation shown on that well to the north,  
12 which is our proposed injector, came from a wellbore  
13 which was originally drilled to produce underlying  
14 Wasatch gas. There was no gas in that particular well,  
15 or there was -- there were no reservoirs to produce from.  
16 So that was an available wellbore in the year 2003, so  
17 that we were able to go into that wellbore, come uphole  
18 from the Wasatch, perforate the Green River Formation in  
19 a thin sand occurrence, test it for presence of oil, and  
20 confirm the presence of oil in that well.

21 At the time the price of oil was so low, the  
22 economic decision of the moment was not to equip the well  
23 for production. It was to hold it for a water flood  
24 project at a later date. That's exactly the status of  
25 that well today. We know we have an available wellbore.

1       We know it's got oil cut, or water cut oil in the G1, and  
2       it's almost certainly connected to our two producing  
3       wells to the south. So it is the well we've chosen to  
4       return to, to utilize for water flood injection in hopes  
5       of moving the oil present in that well from the  
6       right-hand side of the cross section to the left-hand  
7       side, where that oil to the north of 11G can be swept and  
8       recovered in the 11G location.

9               MR. WARD: Thank you.

10              CHAIRMAN JOHNSON: Mr. Gill.

11              MR. GILL: Would you go back to Exhibit E. And  
12       if you were to put an A-to-A prime and correlate it to  
13       your exhibit you just discussed, I just want to kind of  
14       figure out which wells you are looking at.

15              MR. BASSI: It's the green dot closest to the  
16       center of the display in Section 5 is the 11G location.

17              MR. GILL: Those numbers aren't showing up on  
18       mine.

19              MR. BASSI: I apologize for that. They are very  
20       small.

21              MR. GILL: So it's the --

22              MR. BASSI: The northeast of the southwest of  
23       Section 5 has a heavy green dot on it. That's the 11G-5  
24       location.

25              MR. GILL: And then the other one is?

1           MR. BASSI: Is due north by half a mile, has a  
2 blue triangle around it, and is shown as the proposed  
3 injector location. That is the 3W5 well shown on the  
4 right side of the cross section.

5           MR. GILL: Thank you.

6           CHAIRMAN JOHNSON: Mr. Bassi, since we're  
7 looking at Exhibit E, would you please discuss just for a  
8 minute the relevance of the isopach lines around the  
9 proposed injector well? I notice the proposed injector  
10 is very close to the north boundary.

11          MR. BASSI: Correct.

12          CHAIRMAN JOHNSON: And I think the relevance of  
13 the isopach lines is important.

14          MR. BASSI: Umm-hmm.

15          CHAIRMAN JOHNSON: Would you please discuss  
16 that?

17          MR. BASSI: The density of the well control on  
18 Section 5 clearly shows that from that proposed injector  
19 location coming south, the G1 sand thickens from its  
20 minimum thickness to its maximum thickness. We interpret  
21 that as continuity. We further interpret the oil  
22 recovered from that 3W5 location at the north end of the  
23 section to be another indicator of oil continuity from  
24 one location to the other.

25          As we go to the east of that 3W5 location, you

1 can see that all the wells have a similar small number  
2 associated with them on the order of two feet in  
3 thickness. So we are really down to a minimum of  
4 injection thickness to get an appreciable volume of water  
5 into those well holes in order to push things to the  
6 south.

7 You bring up an interesting question for  
8 proximity to the north end, meaning, basically, what  
9 happens as you go further north. I've dropped off the  
10 contours at that point, because you can see the next  
11 location further north has 16 feet of G1 thickness. So  
12 it's looking like, as we go north again, the unit  
13 thickens. However, we know that unit, that sandstone  
14 member to the north, which sits in the position of the  
15 G1, sits down in the water lake of what is produced from  
16 stratigraphically equivalent sandstone in continuity with  
17 that as you go further to the east in the Red Wash Unit.  
18 So the story gets complicated because we've got something  
19 changing right at that location.

20 I don't expect we have oil moving north of that  
21 last occurrence where it was tested. I suspect we've got  
22 some kind of boundary where the oil is no longer trapped,  
23 or the stratigraphic-trapped geometry, as I've shown on  
24 this map, shows it to be completely isolated from things  
25 to the north.

1                   But what I do know from things to the north is  
2                   there is oil contact off to the right of the map that  
3                   separates recoverable oil from recoverable water.  
4                   Furthermore, I can call your attention to the fact if you  
5                   look at another element on that map, the structure  
6                   contours, the lines shown in light gray run east-west  
7                   through the southwest portion of the map. And as you  
8                   look to the northeast portion of the map, you can see  
9                   they run north-south.

10                  What happens in the middle where oil  
11                  accumulation is, they make the transition from one to  
12                  the other. That transition is rather remarkable because  
13                  we've had a 90-degree change in orientation of the  
14                  structural surface on which we are producing from. So in  
15                  all likelihood, there are a series of changes that go  
16                  along with that change in orientation that may explain  
17                  why we have oil left where we do and why we don't have it  
18                  further to the north.

19                  Further to the north, things belong to Red Wash.  
20                  In Red Wash, we have mappable oil/water contacts as we  
21                  work our way down from east to west. At this location,  
22                  we are below those oil/water contacts. But yet, relative  
23                  to Wonsits Valley to the south of us, we are still within  
24                  the oil/water contact. So there is something very odd  
25                  happening.

1 MR. GILL: Thank you.

2 MR. WARD: Okay. Let's move to Exhibit H and  
3 talk a little bit about the injector well.

4 Was Exhibit H prepared by you?

5 MR. BASSI: Yes, it was.

6 MR. WARD: Can you provide some details as to  
7 the water injection well that is currently proposed for  
8 the unit lands?

9 MR. BASSI: Yes. This is exhibit pertains  
10 principally to the water that will be used at that  
11 injection well location. And it's information I  
12 collected from talking to our field sources, who actually  
13 do the work in handling where water comes from and where  
14 it goes relative to our other water flood units in the  
15 vicinity. The series of statements here, I could walk  
16 you through them individually.

17 They say that the ultimate source for injection  
18 water in units, such as this, come from the Green River,  
19 the actual Green River, via a water source well located  
20 adjacent to the river. That source of water is  
21 principally the makeup component of our system, which we  
22 have operating over across, over a number of units.  
23 Delivery of that injection water to a proposed secondary  
24 recovery project in Section 5 at Horse will come from a  
25 pump station located in Section 8, immediately south of

1       Section 5. That -- incidentally, that station is  
2       associated with the injector to the south of us in  
3       Wonsits Valley. So there's already a facility there that  
4       can move water. So we will be taking water from that  
5       facility north into Section 5.

6               Produced water in this proposed unit, as in our  
7       currently operating water floods adjacent to this -- such  
8       as Wonsits Valley -- recycle produced water back into the  
9       injected wells. We expect our initial injector could  
10      take a volume equal to about 200 to 300 barrels of water  
11      per day. We have adequate water rights to supply that,  
12      and we have adequate water in our secondary water  
13      handling system to provide that.

14             In the last statement, there could be additional  
15      injectors added to this project at a later date, which  
16      could take a similar volume. And we have adequate water  
17      rights for that, ultimately. But more importantly, we  
18      have access to produced water that can be used for the  
19      same purpose.

20             MR. WARD: Thank you. One conclusion: In your  
21      expert opinion, secondary recovery operations are  
22      necessary and consistent with the goals to promote the  
23      production of oil, will prevent waste, and will allow for  
24      the development of oil in such a manner that a greater  
25      ultimate recovery of oil may be obtained?



1           MR. BASSI: Yes. I believe that, and I think  
2           you'll see more of that in the testimony to follow.

3           MR. WARD: No further questions for this  
4           witness.

5           CHAIRMAN JOHNSON: Mr. Bassi, let me ask one  
6           clarification here. On Exhibit H, in the first statement  
7           it says, the second sentence, "The water source well is  
8           located in the southeast of the northwest of Section 6,  
9           Township 8 South, Range 21 East." Is that 22?

10          MR. BASSI: That's way off to the east. That's  
11          where our fresh water originally comes from.

12          CHAIRMAN JOHNSON: So it actually is in 21 East?

13          MR. BASSI: Correct.

14          CHAIRMAN JOHNSON: Not 22 East.

15          MR. BASSI: Correct. And again, that water  
16          comes to a number of other secondary recovery units. So  
17          we have a system in place already to move water. And  
18          we're just adding this element to that system.

19          CHAIRMAN JOHNSON: Okay.

20          Mr. Gill.

21                           CROSS-EXAMINATION

22          BY MR. GILL:

23          MR. GILL: Yes. Two questions.

24                       How are you actually transporting that water,  
25                       pipeline or trucks?

1           MR. BASSI: It's pipeline. We have a pipeline  
2           system in place that moves in from source to various pump  
3           stations. We'll need a new pipeline over a short  
4           distance from Section 8 to our injection location in  
5           Section 5, just to move water into that single injector.

6           MR. GILL: And then your last paragraph says you  
7           may add an additional injector. Do you have sufficient  
8           water rights for that?

9           MR. BASSI: Yes, we do.

10          MR. GILL: Thank you.

11          CHAIRMAN JOHNSON: Mr. Alder, do you have  
12          questions for Mr. Bassi?

13          MR. ALDER: With the Board's permission,  
14          Mr. Brad Hill would like to direct questions of Mr.  
15          Bassi.

16          CHAIRMAN JOHNSON: Yes, please.

17                           CROSS-EXAMINATION

18          BY MR. HILL:

19                 MR. HILL: Brad Hill, oil and gas permitting  
20                 manager for the Division.

21                 Mr. Bassi, in your opinion, would any water  
22                 injected as part of this enhanced recovery project be  
23                 stratigraphically confined or isolated within the  
24                 unitized interval?

25                 MR. BASSI: It's my thinking, or my opinion,

1       that any water injected into the G1 sand is going to stay  
2       within the boundaries of what I'm asking to unitize and  
3       include within this. Furthermore, I expect most of that  
4       to stay within the G1 sand itself.

5               MR. HILL: Okay. Thank you.

6               MR. ALDER: No other questions.

7               CHAIRMAN JOHNSON: Does the Board have any  
8       questions for Mr. Bassi?

9               Mr. Ward, any redirect?

10              MR. WARD: No.

11              CHAIRMAN JOHNSON: Thank you, Mr. Bassi.

12              MR. WARD: My next witness I would like to call  
13       is Bill Watts, a petroleum engineer.

14                      WILLIAM K. WATTS, JR.,

15                      having been first duly sworn,

16                      was examined and testified as follows:

17                              DIRECT EXAMINATION

18       BY MR. WARD:

19                      MR. WARD: Would you please state your full name  
20       and address for the record.

21                      MR. WATTS: William K. Watts, Jr. 6228 East  
22       Long Place, Centennial, Colorado, 80112.

23                      MR. WARD: And could you please provide a brief  
24       description of your qualifications as a petroleum  
25       engineer.

1           MR. WATTS: I have bachelors and masters degrees  
2           in physics, masters degree in mechanical engineering, all  
3           from the University of Missouri, Columbia.

4           I worked for Texaco for 21 years as a petroleum  
5           engineer, the last 19 as a reservoir engineer. I worked  
6           for Questar, which is now QEP, for a little over four  
7           years in the Uinta Basin.

8           I'm very familiar with this project, since I  
9           basically was watching it since the injection first  
10          started in the G1 sand in this area. So I'm very  
11          familiar with this project. I've worked various water  
12          floods.

13          MR. WARD: And you've testified before the Board  
14          before as an expert?

15          MR. WATTS: I have testified, yes, in Utah  
16          before, in Wyoming, and in Oklahoma.

17          MR. WARD: And I'd ask that Mr. Watts be  
18          recognized as an expert in the field of petroleum  
19          engineering.

20          MR. ALDER: No objection.

21          CHAIRMAN JOHNSON: Does the Board have any  
22          objections?

23          We'll recognize Mr. Watts as an expert.

24          MR. WARD: Thank you.

25          First, as a matter of housekeeping, we would

1       like to withdraw Exhibit I from our request. So we will  
2       be starting with Exhibit J.

3               CHAIRMAN JOHNSON: Okay.

4               MR. WATTS: Let's go back to E. I want to talk  
5       about E first.

6               MR. WARD: We're going to go back to Exhibit E.

7               MR. JENSEN: Just by way of clarification,  
8       Mr. Ward, are you asking that it be excised from --

9               MR. WARD: Yes. I won't move for its admission.  
10       And we would just like to withdraw it.

11              MR. JENSEN: Julie Ann, will you follow up on  
12       that? Thank you.

13              MR. WARD: Okay. You've asked that we look back  
14       at Exhibit E that we've already introduced.

15              MR. WATTS: Right. I just want to basically  
16       summarize to see where we're going here.

17              Near the end of '05, we started injecting in  
18       this well right here and got excellent water flood  
19       response.

20              MR. JENSEN: For the record, let's identify.  
21       The record won't show when you say "this well right  
22       here."

23              MR. WATTS: That's the 3W well?

24              MR. WARD: Yes.

25              MR. WATTS: It's the 3D8 well, Wonsits Valley.

1       It's in the Wonsits Valley unit.

2               We started injecting in that well about October  
3       of '05, and we got excellent secondary response in these  
4       three wells that are shaded in green here. I'm not going  
5       to talk too much about -- about that well, 7W7? Is that  
6       what it is?

7               CHAIRMAN JOHNSON: That's the southwest well.

8               MR. WATTS: That's in the Wonsits Valley Field,  
9       and it doesn't really -- we got good response from that  
10      well, but it doesn't pertain to these, the Section 5  
11      water flood that we're going to talk about today.

12              We got an excellent response in these two wells,  
13      the 11G-5 and the 13G-5. But all the secondary floodable  
14      area is from the south of these two wells. We would like  
15      to do the same thing and collect secondary oil from the  
16      north. So we can go back, to.

17              MR. WARD: Okay. We have submitted three  
18      exhibits, J, K, and L, that show well curves.

19              Were all three of these prepared by you or under  
20      your supervision?

21              MR. WATTS: Yes.

22              All right. This is the best response of the  
23      well. We basically have -- the primary part of the curve  
24      is following this line. And if we had not ever  
25      injected --

1                   CHAIRMAN JOHNSON: That's the green line?

2                   MR. WATTS: The green line is the oil  
3 production, right.

4                   And this is the whole curve. And we started  
5 injecting about right where I have the curser now.  
6 That's when we started injecting. We practically got  
7 piston displacement, which shows there was almost no  
8 fill-up to fill up in this reservoir in when we started  
9 injecting, because we got immediate secondary response.

10                  CHAIRMAN JOHNSON: You are actually pointing to  
11 the bottom part of the curve?

12                  MR. WATTS: That's correct.

13                  MR. JENSEN: Which, if you go down to the bottom  
14 of that exhibit, is in the area of the blue 1/2011. If  
15 you go up from that reference at the bottom, you'll be at  
16 the bottom of the green line.

17                  MR. WARD: Yeah. I think the blue line is the  
18 key on the bottom. I think you could tie it to the '06.  
19 The numbers that run along the bottom are the year. So I  
20 think in '06, correct, is that when you started?

21                  MR. WATTS: Right at the end of '05. It was  
22 October or November of '05 we started injecting. And we  
23 got virtually immediate secondary response. We had a  
24 long period of increasing production. And still, over  
25 the last couple of years, it's essentially been flat.

1 And this is the response from just one injector. We'd  
2 like to do this again.

3 Again, this is secondary flooding only from the  
4 south of this well. We have no secondary from the north,  
5 coming from the north. And our current proposed injector  
6 will provide secondary response from the north.

7 All right. This is the 13G-5. Again --

8 CHAIRMAN JOHNSON: We're now on Exhibit K?

9 MR. WARD: Yes.

10 MR. WATTS: Again, injecting starting at the end  
11 of '05. And we got -- we got excellent initial response.  
12 And I really have no explanation as to why it went up to  
13 over 90 barrels a day from 20 and then immediately  
14 started falling off. But even now, we're still -- if you  
15 extrapolate this primary, we're still above where the  
16 primary would be. So we're still making good oil from  
17 injection.

18 Next.

19 MR. WARD: We're now moving to Exhibit L.

20 MR. WATTS: Right. And this is showing both the  
21 past and anticipated future production for the two wells  
22 combined. The light green is the primary, and I have  
23 drawn on here an extrapolation of what would have  
24 happened had we never injected those two -- converted  
25 that one well to injection. The dark green line is the



1 secondary, or the production since we started injection.  
2 And it is extrapolated into the future as what happens if  
3 we don't inject anymore.

4 And the last one, the last segment of the curve  
5 shows what we anticipate the production to be when we add  
6 the second injector to the north.

7 That last anticipated production is based on an  
8 analogy of what we've got from the first injector. I  
9 drew a floodable area on Bob Bassi's isopach map,  
10 calculated floodable volume from that. From that, I  
11 calculated the secondary barrels-of-acre-foot recovery,  
12 and applied that same barrels-per-acre-foot recovery to  
13 the new injector based on the new floodable area we would  
14 be achieving. And that gives us about 162,000 barrels to  
15 be recovered from the new injector.

16 The cost of the project is a little less than  
17 \$300,000. So the development cost us less than \$2 a  
18 barrel, and black wax price is about 70 now. So it's a  
19 very economic project.

20 CHAIRMAN JOHNSON: When you say the recovery was  
21 162,000 barrels --

22 MR. WATTS: Will be.

23 CHAIRMAN JOHNSON: -- is that the incremental  
24 production?

25 MR. WATTS: The incremental recovery from -- why

1 don't we go to the next slide. I think I've got all  
2 those numbers summarized on next slide.

3 MR. WARD: This is Exhibit M.

4 Was this prepared by you?

5 MR. WATTS: Yes, it was.

6 MR. WARD: Let's talk about the --

7 MR. WATTS: Basically, the ultimate primary oil,  
8 and that is including the extraction of the primary  
9 curve, would be about 140,000 barrels. Our cumulative  
10 secondary oil, which is basically the incremental  
11 secondary over and above the extrapolated primary, the  
12 109, but it's not done yet. Ultimately, I expect it to  
13 be about 236,000 barrels of oil. This new injector  
14 should yield an ultimate of about 162,000 barrels of oil.  
15 The rate of return is over 100 percent for the project.

16 As I say, it's less than \$2 a barrel development  
17 costs, and black wax is running around 70 again, so.

18 MR. WARD: Thank you. So in your conclusion and  
19 in your expert opinion, will the value of the estimated  
20 additional recovery of oil from the Horse unit  
21 substantially exceed the estimated additional cost  
22 incident to conducting the unit operations?

23 MR. WATTS: Yes, it will.

24 MR. WARD: Thank you. No further questions.

25 CHAIRMAN JOHNSON: Mr. Alder, do you have

1 questions?

2 MR. ALDER: Again, with the Board's permission,  
3 Mr. Doucet, petroleum engineer for the Division, would  
4 like to ask the questions of the witness.

5 CROSS-EXAMINATION

6 BY MR. DOUCET:

7 MR. DOUCET: Dustin Doucet, petroleum engineer  
8 for the Division.

9 You had mentioned in arriving at your I think  
10 it's Exhibit L, the new secondary curve, you described  
11 the floodable area on top of Bob Bassi's map.

12 Can you go back to that map and just kind of  
13 explain what the floodable area -- or describe the  
14 floodable area that --

15 MR. WATTS: Sure.

16 MR. DWORSHAK: -- you're talking about? I got  
17 Exhibit E.

18 MR. WATTS: E, yes. Okay.

19 Okay. From the injector, basically the  
20 floodable area -- I don't know. It might be easier if I  
21 just get up and show.

22 The way I draw a floodable area is, from the  
23 injector to the producer, I draw a right-angle curve  
24 there and then draw an arc. I don't cover the point. I  
25 draw an arc on both sides. And then I do the same thing

1 with this, from this injector to that producer. And I  
2 just draw the floodable area that way. And then,  
3 basically, I counted the squares and the isopach to get a  
4 floodable volume.

5 MR. DOUCET: So you just use the three existing  
6 wells?

7 MR. WATTS: Yes. I just use these. I drew  
8 floodable area from this to that, this to that, and then  
9 for the new one, from this to that, and that one to that  
10 one.

11 MR. DOUCET: Okay. Thank you.

12 MR. JENSEN: So that the record is clear, on  
13 Exhibit E, the witness has pointed to the two triangles  
14 and the two green wells within the purple outline.

15 MR. WATTS: Correct.

16 CHAIRMAN JOHNSON: And anything that overlaps  
17 you don't count twice.

18 MR. WATTS: That's correct. Basically, I just  
19 draw them and then just draw the area around the  
20 conglomerate.

21 CHAIRMAN JOHNSON: Mr. Gill.

22 CROSS-EXAMINATION

23 BY MR. GILL:

24 MR. GILL: Yes. Is that model method and the  
25 assumptions you used consistent with generally

1       accepted --

2               MR. WATTS:  It's pretty standard, yeah.  It's  
3       pretty standard.  You can find that method in slider.  
4       The way I learned it, originally, was actually from the  
5       Texaco Secondary Recovery Manual many years ago.

6               CHAIRMAN JOHNSON:  It's not a proprietary  
7       document for Texaco?

8               MR. JENSEN:  It isn't now.

9               MR. WATTS:  Like I say, you could slip a  
10       slider -- some people draw the whole square, and I draw  
11       around it.  In this case, it really doesn't matter which  
12       methodology you use because if I'm too little on one, I'm  
13       too little on the other.  And the barrels-per-acre foot,  
14       you know, they come out -- they come out the same.  I'm  
15       saying, "Okay, I'm going to get" -- if I get -- if I say  
16       I'm going to get 70 percent of the oil I did get, I'd get  
17       70 percent of the oil I did get either way, regardless of  
18       which methodology I used to draw the floodable area.

19              MR. GILL:  Are there any natural drive  
20       mechanisms in this reservoir?

21              MR. WATTS:  I don't know that we have enough  
22       history.  This whole area has been under various --  
23       there's no evidence of it.  But, you know, this thing --  
24       of course, it could be from prior waterflood at Wonsits  
25       Valley.  But that injector to the south tested all water;

1 and yet, when we inject it, it's driving oil, obviously.  
2 It's doing a great job of driving oil. And there was --  
3 essentially, couldn't have been much gas saturation in  
4 the reservoir when we started injecting, because we got  
5 practically piston displacement on recovery. Normally,  
6 you don't see any increase in secondary until you've  
7 reached about 60 percent of fill-up. And by "fill-up," I  
8 mean you've refilled any gas saturation that formed  
9 during primary production.

10 In this case, we got secondary response  
11 virtually the next month after we started injecting. So  
12 there must have been no fill-up to obtain. It's hard to  
13 say whether that was from some natural drive or previous  
14 injection in Wonsits Valley unit. Because Wonsits Valley  
15 has been injecting in various zones for a long time.

16 MR. GILL: And I'd refer you to Exhibit K. You  
17 did -- that's kind of where I'm heading on this. You  
18 answered half of it.

19 I saw there's some -- on Exhibit K, starting  
20 between on the bottom axis between 08 and 09 is a red gas  
21 production.

22 MR. WATTS: Oh, yes.

23 MR. GILL: And it's almost insignificant.

24 MR. WATTS: Yeah. And I didn't -- yeah. That  
25 red gas production, it looks like they started counting

1       it again.

2               MR. GILL:   Say that again.

3               MR. WATTS:   They started counting it again.   I  
4       don't know whether that's really zero prior to that date  
5       or not.   It looks like maybe they just started catching  
6       it in our production system.

7               MR. GILL:   Then in your expert opinion, do you  
8       think what you are proposing will prevent waste and  
9       result in ultimate --

10              MR. WATTS:   Yes, I do.   I think --

11              MR. GILL:   -- recovery --

12              MR. WATTS:   -- if we don't do this project -- if  
13       we don't do this project, we'll make much less oil than  
14       if we do.   I do believe it will prevent waste if fully  
15       developed for the company.

16              MR. GILL:   And in just rough terms, what is the  
17       percentage recovery from the primary -- what's the  
18       percentage of the oil-in-place in primary that you think  
19       you can get?   And then what --

20              MR. WATTS:   I really haven't done an  
21       oil-in-place calculation on it.   But this black wax is  
22       typically 10 percent.

23              MR. GILL:   That's my next question.   What is the  
24       characteristics of the production?

25              MR. WATTS:   Black wax is typically 10 percent,

1       10 percent of oil-in-place, just because of the  
2       viscosities.

3               MR. GILL: And so to answer my question, you  
4       don't have a --

5               MR. WARD: I have not done an oil-in-place study  
6       for this entire reservoir.

7               MR. GILL: Ten percent, 20 percent, within an  
8       margin error of 5 as primary, and then another 10 percent  
9       by secondary?

10              MR. WATTS: Down here, we, at the Glen Bench  
11       Unit -- Red Wash, we're going to make a 20 percent total.

12              MR. GILL: Primary?

13              MR. WATTS: Total, even after secondary. That's  
14       at the Red Wash Unit, but it's cold. Glen Bench unit,  
15       being a little warmer -- 140 degrees -- it makes a huge  
16       difference. Red Wash is about 7 1/2 percent of hoist  
17       (phonetic) viscosity, Glen Bench is about 3 percent hoist  
18       (phonetic) in viscosity. We're going to get about 35  
19       percent of the oil-in-place in the Glen Bench unit.

20              MR. GILL: Have you had any indication at all of  
21       any contact with fresh water -- or fresh water would be  
22       involved at all in anything that you are doing?

23              MR. WATTS: I'm not involved -- I mean, I've not  
24       come across any. I mean, we inject fresh water from the  
25       river.



1           MR. GILL:   Fresh water -- sources of potable  
2   water, ground water in the formations above it?  Any --

3           MR. WATTS:  No.  It's -- we haven't -- none of  
4   it's been potable.

5           MR. GILL:  That's all I have, Mr. Chairman.

6           CHAIRMAN JOHNSON:  Mr. Alder, let me make sure.  
7   Did the State have any more questions?

8           MR. ALDER:  Just a couple.

9           CHAIRMAN JOHNSON:  Go ahead.

10                           CROSS-EXAMINATION

11   BY MR. ALDER:

12           MR. ALDER:  Mr. Watts, have you been projecting  
13   these rates of return previously on other water floods?

14           MR. WATTS:  Not generally, but this is unique in  
15   that the only thing we have to do is convert one well.  I  
16   mean, the reason the rate of return is so good on this is  
17   the well is already drilled, and basically, we just have  
18   to equip it for injection and lay a line to it.  If you  
19   start a new water flood from scratch, you're not to get  
20   anywhere near this good a rate of return, or if we have  
21   to drill injectors, or do things like that.

22           MR. ALDER:  Thank you.

23           CHAIRMAN JOHNSON:  Does the Board have other  
24   questions?

25           Mr. Ward.

1           MR. WARD: Yeah, at this time I'd like to move  
2           for admission of Exhibits A through H, and J through M.  
3           Everything but I.

4           CHAIRMAN JOHNSON: Okay. So A through H, and J  
5           through M.

6           Mr. Alder, any objections?

7           MR. ALDER: No objection.

8           CHAIRMAN JOHNSON: Does the Board have any  
9           objections?

10          Okay. Those will be admitted.

11          Mr. Ward, did you have any redirect or follow-up  
12          for --

13          MR. WARD: No, I do not.

14          CHAIRMAN JOHNSON: Thank you, Mr. Watts. Okay.

15          MR. WARD: With this testimony and the pleadings  
16          on file in the matter, we believe we have carried our  
17          burden to demonstrate to the Board that the Horse unit is  
18          consistent with the goals outlined by Utah law and  
19          satisfies the requirements to be certified as an enhanced  
20          recovery project. And I'd like to thank you for your  
21          time today.

22          CHAIRMAN JOHNSON: Thank you.

23          Mr. Alder.

24          MR. ALDER: Yes, just briefly. The Division  
25          would ask Mr. Clint Dworshak to summarize the Division's

1 investigations and recommendations to the Board on this  
2 matter.

3 CHAIRMAN JOHNSON: Thank you.

4 Mr. Dworshak.

5 TESTIMONY BY MR. DWORSHAK

6 MR. DWORSHAK: Clint Dworshak, compliance  
7 manager for the Division.

8 I was involved with the staff that reviewed the  
9 submittal. I also helped prepare the February 14 memo to  
10 the Board.

11 In testimony today by QEP, they have addressed  
12 the concerns that were outlined in that memo for the  
13 Board. Also, in testimony, they have supported their  
14 land, geologic, and engineering exhibits, and their  
15 relevance to this matter.

16 I'd also like to point out that they have  
17 addressed one of our points of concern, which was  
18 approval for the injection well would be through the EPA,  
19 Region 8.

20 And based on that, the Division feels that this  
21 request is reasonable. The Division supports it and  
22 recommends that the Board approves the Request.

23 CHAIRMAN JOHNSON: Thank you. Anything else,  
24 Mr. Alder?

25 MR. ALDER: No, Mr. Chair.

1           CHAIRMAN JOHNSON: Is there anyone else present?  
2           Mr. Coulthart?  
3           MR. COULTHART: Thank you, Mr. Chairman. My  
4           name is Michael Coulthart. I represent the Bureau of  
5           Land Management in this hearing.  
6           The BLM designated the Horse unit area as  
7           logically subject to unitization on February 11, 2011.  
8           In doing so, we found that unit agreement and exhibits to  
9           that unit agreement acceptable. That designation was  
10          forwarded to the Board, along with the agreement and  
11          exhibits, on February 14, 2011. And the BLM supports the  
12          projects. Thank you.  
13          CHAIRMAN JOHNSON: Thank you.  
14          Would anyone else like to address the Board?  
15          Seeing no one, what's the pleasure of the Board?  
16          MR. GILL: I would move, Mr. Chairman, that the  
17          Board approve the application within the context of the  
18          law and authorities that we have. So I'm not trying --  
19          there may be other agencies, including the EPA, that have  
20          their jurisdiction. But to the extent that the  
21          request -- the authority we have, I would move that we  
22          grant the application.  
23          CHAIRMAN JOHNSON: And have Mr. Ward prepare the  
24          Order?  
25          MR. GILL: And have Mr. Ward prepare the Order.

1                   CHAIRMAN JOHNSON: Is there a second?

2                   MR. JENSEN: Second, with the request that the

3                   Order be prepared and submitted such that Chairman

4                   Johnson can sign it before close of business on Monday.

5                   MR. WARD: Yes, no problem.

6                   CHAIRMAN JOHNSON: Is that possible? Thank you.

7                   Okay.

8                   Any other discussion?

9                   All those in favor say, "Aye."

10                  THE BOARD: Aye.

11                  CHAIRMAN JOHNSON: Any who are opposed?

12                  Petition is granted. Thank you, Mr. Ward.

13                  MR. WARD: Thank you.

14                  MR. ALDER: Mr. Chairman?

15                  CHAIRMAN JOHNSON: Mr. Alder.

16                  MR. ALDER: Just one other matter.

17                  I wanted to, on behalf of the Division and the

18                  Attorney General's office, acknowledge your service and

19                  thank you and commend you for the way you've been

20                  handling the hearings -- obviously, been trained well by

21                  the Attorney General's office. And we're going to miss

22                  you. And I just wanted to -- just noticing how well the

23                  hearing went today, I just wanted to tell you that we

24                  will miss you and we appreciate you.

25                  CHAIRMAN JOHNSON: I would like to thank

1 Mr. Ward and Mr. Schwendiman before him. It's very rare  
2 that the Board does not deliberate on a matter. When the  
3 cases are as well presented as you've done day, it makes  
4 it very easy for us. So appreciate that.

5 And I appreciate all the assistance from the  
6 Division over the years. It really is mixed feelings,  
7 this being my last hearing. But I hope to continue  
8 seeing all of you again. And thank you very much for  
9 everything you've done for me. Thank you.

10 Is there anything else that needs to come before  
11 the Board? Seeing nothing, then we will be adjourned.  
12 Thank you.

13 (The matter was concluded at 11:40 a.m.)  
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CERTIFICATE

State of Utah )  
ss.  
County of Salt Lake )

I, Michelle Mallonee, a Registered  
Professional Reporter and Notary Public in and for the  
State of Utah, do hereby certify:

That the proceedings of said matter was  
reported by me in stenotype and thereafter transcribed  
into typewritten form;

That the same constitutes a true and correct  
transcription of said proceedings so taken and  
transcribed;

I further certify that I am not of kin or  
otherwise associated with any of the parties of said  
cause of action, and that I am not interested in the  
event thereof.



*Michelle Mallonee*  
Michelle Mallonee, RPR, CSR